Original Article

A study of milligan morgan haemorrhoidectomy versus radiofrequency ablation for the treatment of grade III hemorrhoids

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Abstract

Introduction: Hemorrhoids are common human afflictions known since the dawn of history. Surgical management of this condition has made tremendous progress from complex ligation and excision procedures in the past to simpler techniques that allow the patient to return to normal life within a short period. **Aims and Objective:** Study of Milligan Morgan Haemorrhoidectomy versus Radiofrequency Ablation for the Treatment of Grade III Hemorrhoids **Methodology:** After approval form the institutional ethical committee a prospective clinical trial on the 40 patients Diagnosed as of Grade III hemorrhoids during January 2014 to January 2015 was carried out at the tertiary care hospital, written consent of the patients were taken. All eligible Grade III hemorrhoids patients were given treatment by Milligon–Morgan Haemorrhoidectomy (**Group B**). An Ellman Dual 4 MHz radiofrequency generator was used for the Radiofrequency ablation and Plication of haemorrhoids (**Group A**). The eligible patients for the surgeries were randomly allocated to the Group A (20 patients) and Group B (20 patients) by computer generated random numbers. The statistical analysis done by Un-paired t-test by Graph Pad Prism 5 software. **Result:** The difference in two groups of the average age is comparable ($P>0.05$;$t = 1.114$;$df=38$.); Operative time was significantly lower in Group A compared to Group B($P<0.0001$;$t = 10.00$; $df=38$.) ; Intra-operative bleeding was significantly lower in Group A compared to Group B ($P< 0.0001$; $t = 41.1437$ $df=38$); Time to first bowel movement (hr) was significantly lower in Group A compared to Group B ($P<0.0001$; $t = 14.10$;$df=38$); Average hospital stay (Days) was significantly lower in Group A compared to Group B ($P<0.0001$; $t = 4.00$;$df=38$); Average Analgesic required (No. of Tab.) was significantly lower in Group A compared to Group B ($P<0.0001$;$t=15.81$;$df=38$). Time required for Wound healing (Days) was significantly lower in Group A compared to Group B ($P<0.0001$;$t=10.73$;$df=38$).Overall the complications were, more in the Group B (70%) (Milligan Morgan Haemorrhoidectomy) as compared to Group A (10%) (Radiofrequency Ablation). The complications like Urinary retention, Bleeding, Incontinence of flatus, External tags, Recurrence, Anal stenosis, were common in Group B than Group A **Conclusion:** Overall the operative outcomes like less intraoperative bleeding, less time for the first bowel movement with less analgesic were better in Radiofrequency Ablation and overall complications were less in Radiofrequency Ablation compared to conventional Milligan Morgan Haemorrhoidectomy.

Keywords: Radiofrequency Ablation, Milligan Morgan Haemorrhoidectomy, Grade III Hemorrhoids, Wound healing.

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INTRODUCTION

Hemorrhoids are common human afflictions known since the dawn of history. Surgical management of this condition has made tremendous progress from complex ligation and excision procedures in the past to simpler techniques that allow the patient to return to normal life within a short period Development in the treatment of haemorrhoidal disease over the last 20 years has moved towards less invasive and non-ablative surgery. Several new techniques have been developed, but the use of these techniques in clinical practice and the general

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management of patients with haemorrhoidal disease. Generally internal hemorrhoids are defined by an expansion of the normally occurring anal vascular cushions located in the upper part of the anal canal [1,2]. The internal hemorrhoids are covered by a mucous membrane. The external hemorrhoids originate from veins surrounding the anal verge and are covered by the skin. The term haemorrhoidal disease is used only when the expansion of the vascular cushions in the anal canal and the external veins cause symptoms. Recurrence of the haemorrhoidal disease is defined as the recurrence of the symptoms in combination with objective findings. The frequency peaks between the age of 45 and 65 years and is more common in men[3]. The true prevalence is unknown, but data from the National Center of Health Statistics in the United States estimates a prevalence of 4.4% 3.In the literature, there are several theories describing the causes of the haemorrhoidal disease. Some believe that it is primarily a disease of the veins in line with the varicose veins in the esophagus. A morphological and functional failure of a sphincter mechanism coordinating the filling and drainage of the anorectal vascular cushions may be the cause[4]. Another hypothesis is that the disease is caused by a weakening of the collagen support in the anal canal where the submucosal collagen fibrils degenerates Danish Medical Journal[2] with sliding mucosa during defecation or physical activity as a result[5]. A third theory suggests an increased arterial flow to the vascular plexus[6]. Constipation and bowel habits with straining are associated with the haemorrhoidal disease[3,7]. Hemorrhoidectomy is frequently associated with significant postoperative pain. The surgeons are always on the lookout for new techniques to reduce this pain and such attempts are constantly being evaluated to achieve the ultimate. Circumferential mucosectomy with a stapler, diathermic hemorrhoidectomy with high frequency device, and the doppler guided hemorrhoidal artery ligation have significantly modified the classical indications for surgical treatment of hemorrhoids. Apart from reduction of pain, surgical techniques have evolved to solve complications such as postoperative bleeding, stenosis and recurrence. Use of harmonic scalpel[8], ligasure[9] and closed [11] methods of hemorrhoidectomy have been proposed to tackle the shortcomings often associated with conventional procedures Attempting at a similar aim, they used a combinationtechnique of radiofrequency ablation and suture fixation of the hemorrhoidal mass for prolapsing hemorrhoids in the irhospital over the last seven years [12]. They found the procedure to be quicker, less painful, and equally effective when compared with other types of surgical procedures for hemorrhoids [13].Radiofrequency coagulation is a method of tissue ablation using a frequency as high as is used for radio broadcasting. The alternating current passes down from aninsulated electrode tip of the radiofrequency device to the targeted tissue and generates changes in the direction of ions within the tissue fluid. The tissue is heated by electricresistive heating[13]. During contact with the radio waves, water in the tissue gets vaporized when the temperature reaches close to 100^0C. However, as the temperature is kept under control at 100^0 C, it causes little charring and carbonization. This tissue vaporization also results insignificant hemostasis without actually burning the tissue[14]. After subjecting the hemorrhoids to the radio frequency waves, the ablated mass is fixed to the underlying tissue with absorbable suture material within the anal canal.

MATERIAL AND METHODS

After approval form the institutional ethical committee a prospective clinical trial on the 40 patients of Diagnosed of Grade III hemorrhoids during January 2014 to January 2015 was carried out at the tertiary care hospital, written consent of the patients regarding benefits and side-effects of both the treatment methods was explained, and those who don't give consent, having serious associated illness, deranged coagulation profile were excluded from the study. All eligible Grade III hemorrhoids patients were given treatment by Milligon –Morgan Haemorrhoidectomy was performed by the Standard method described in Literature [1]this constituted treatment **Group B**. An Ellman Dual 4 MHz radiofrequency generator was used for the Radiofrequency ablation and Plication of hemorrhoids; the procedure performed with the patient in lithotomy position. A two –finger gentle stretching (Lord's anal Dilation) for Reliving the sphincter spasm[12, 16].This constituted treatment **Group A**. The eligible patients for the surgeries were randomly allocated to the Group A (20 patients) and Group B (20 patients) by computer generated random numbers. The statistical analysis done by Un-paired t-test by Graph Pad Prism 5 software.

RESULTS

Table 1: Distribution of the Patients as per the Various Study Variables

Study Variables	Group A (Mean ± SD)(n=20)	Group B (Mean ± SD) (n=20)	p-value (t-unpaired)
Average age (yrs.)	44±3 yrs.	48±4 yrs.	P>0.05;t=1.114;df=38.
Operative time (min)	9± 4	31±8	P<0.0001 ;t = 10.00; df=38.
Intra-operative bleeding	9.5± 3ml	58±4ml	P< 0.0001 ; t = 41.1437df=38
Time to first bowel movement (hr)	12±1.2hrs	27±1.5hrs	P<0.0001; t = 14.10df=38
Average hospital stay (Days)	1.1±0.6 days	3±1 days	P<0.0001; t = 4.00df=38
Average Analgesic required (No. of Tab.)	12±2 Tabs	21±2 Tabs	P<0.0001;t=15.81df=38
Wound healing (Days)	13±3 days	28±5days	P<0.0001;t=10.73df=38

The difference in two groups of the average age is comparable (P>0.05;t = 1.114;df=38.); Operative time was significantly lower in Group A compared to Group B(P< 0.0001 ;t = 10.00; df=38.) ; Intra-operative bleeding was significantly lower in Group A compared to Group B (P< 0.0001 ; t = 41.1437 df=38); Time to first bowel movement (hr) was significantly lower in Group A compared to Group B (P<0.0001; t = 14.10;df=38); Average hospital stay (Days) was significantly lower in Group A compared to Group B (P<0.0001; t = 4.00 ;df=38); Average Analgesic required (No. of Tab.) was significantly lower in Group A compared to Group B (P<0.0001;t=15.81 ;df=38). Time required for Wound healing was significantly lower in Group A compared to Group B (P<0.0001; t=10.73; df=38).

Table 2: Distribution of the patients as per Post–Operative Complications in Two Different Treatments Groups

Complications	Group A (n=20)	Group B(n=20)
Urinary retention	1(5%)	3(15%)
Bleeding	1(5%)	3(15%)
Incontinence of flatus	1(5%)	2(10%)
External tags	2(10%)	3(15%)
Recurrence	1(5%)	1(5%)
Anal stenosis	0(0%)	2(10%)
Total	**6(30%)**	**14 (70%)**

Overall the complications were, more in the Group B (70%) (Milligan Morgan Haemorrhoidectomy) as compared to Group A (10%) (Radiofrequency Ablation). The complications like Urinary retention, Bleeding, Incontinence of flatus, External tags, Recurrence, Anal stenosis, were common in Group B than Group A.

DISCUSSION

The notable characteristic of radiofrequency coagulation is its property in achieving immediate reduction of vascular components of the hemorrhoids[15] which is followed by fixation of the mucosa to the underlying tissue as healing occurs in the process by cicatrisation[16].The rationale behind using an absorbable material such as chromic catgut for plication was that the time needed for absorption of the catgut was almost identical to the time needed by the ablated and plicatedhemorrhoidal mass to get fixed to the underlying tissue. Over all the Radiofrequency Ablation was found more beneficial than Milligan Morgan Haemorrhoidectomy with the less complications in our study we have observed that The difference in two groups of the average age is comparable (P>0.05;t = 1.114;df=38.); Operative time was significantly lower in Group A compared to Group B(P< 0.0001 ;t = 10.00; df=38.) ; Intra-operative bleeding was significantly lower in Group A compared to Group B (P< 0.0001 ; t = 41.1437 df=38); Time to first bowel movement (hr) was significantly lower in Group A compared to Group B (P<0.0001; t = 14.10;df=38); Average hospital stay (Days) was significantly lower in Group A compared to Group B (P<0.0001; t = 4.00 ;df=38); Average Analgesic required (No. of Tab.) was significantly lower in Group A compared to Group B (P<0.0001;t=15.81 ;df=38). Time required for Wound healing was significantly lower in Group A compared to Group B (P<0.0001;t=10.73;df=38) Overall the complications were, more in the Group B (70%) (Milligan Morgan Haemorrhoidectomy) as compared to Group A (10%) (Radiofrequency Ablation). The complications like Urinary retention, Bleeding, Incontinence of flatus, External tags, Recurrence, Anal stenosis, were common in Group B than Group A. Above findings are comparable with **Gupta PJ *et al* [15,16].**

CONCLUSION

Overall the operative outcomes like less intraoperative bleeding, less time for the first bowel movement with less analgesic were better in Radiofrequency Ablation and overall complications were less in Radiofrequency Ablation compared to conventional Milligan Morgan Haemorrhoidectomy.

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